

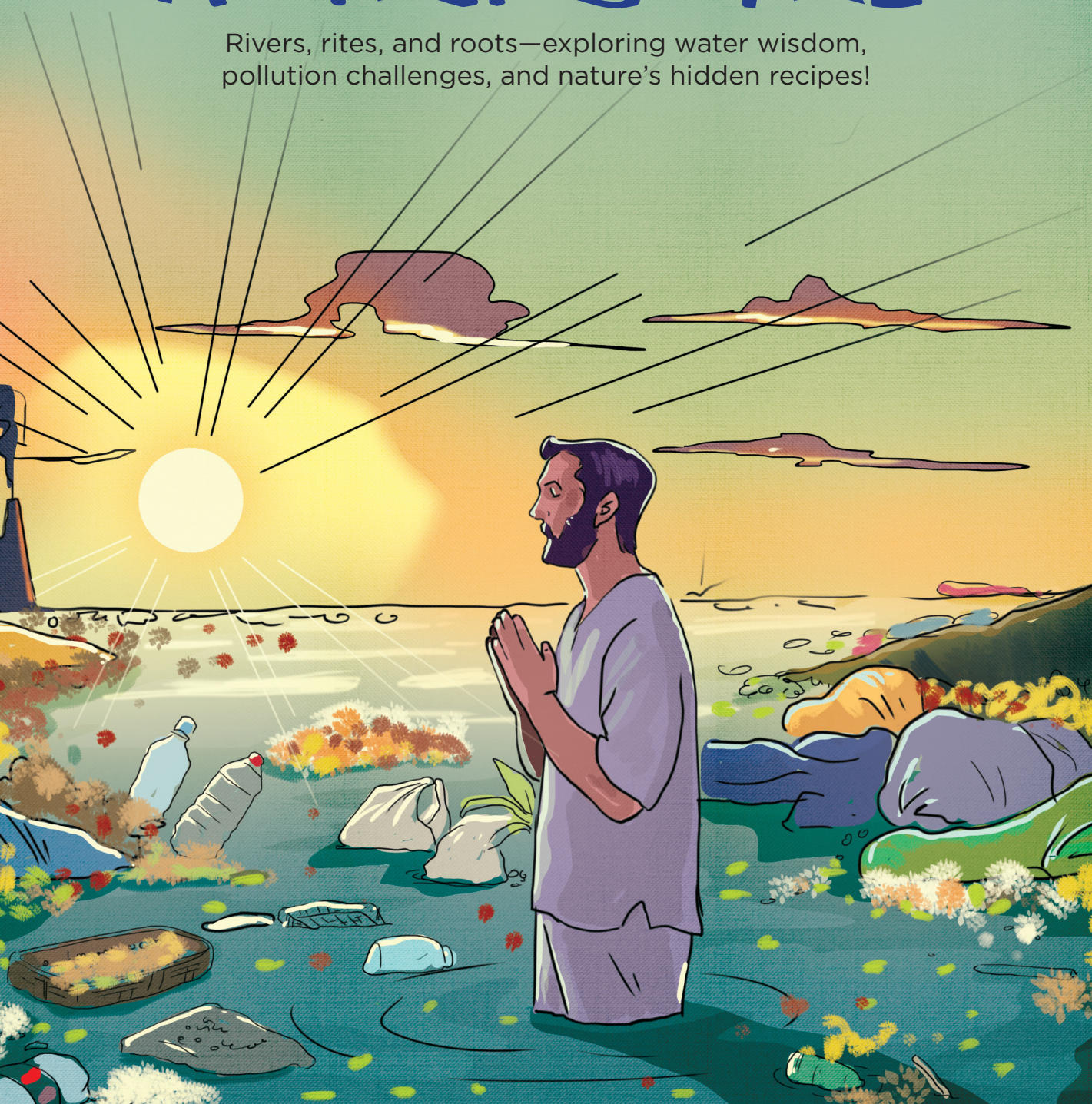
gobar times

Issue no. 272, January 1–31, 2025

A DOWN TO EARTH SUPPLEMENT FOR THE YOUNG AND CURIOUS

A RIVER'S TALE

Rivers, rites, and roots—exploring water wisdom, pollution challenges, and nature's hidden recipes!



RIVERS, RITUALS, AND REALITY

As millions gather for Maha Kumbh 2025, can we ensure our rivers remain clean? Aarav's journey reveals the urgent need to protect our sacred waters from pollution and neglect.

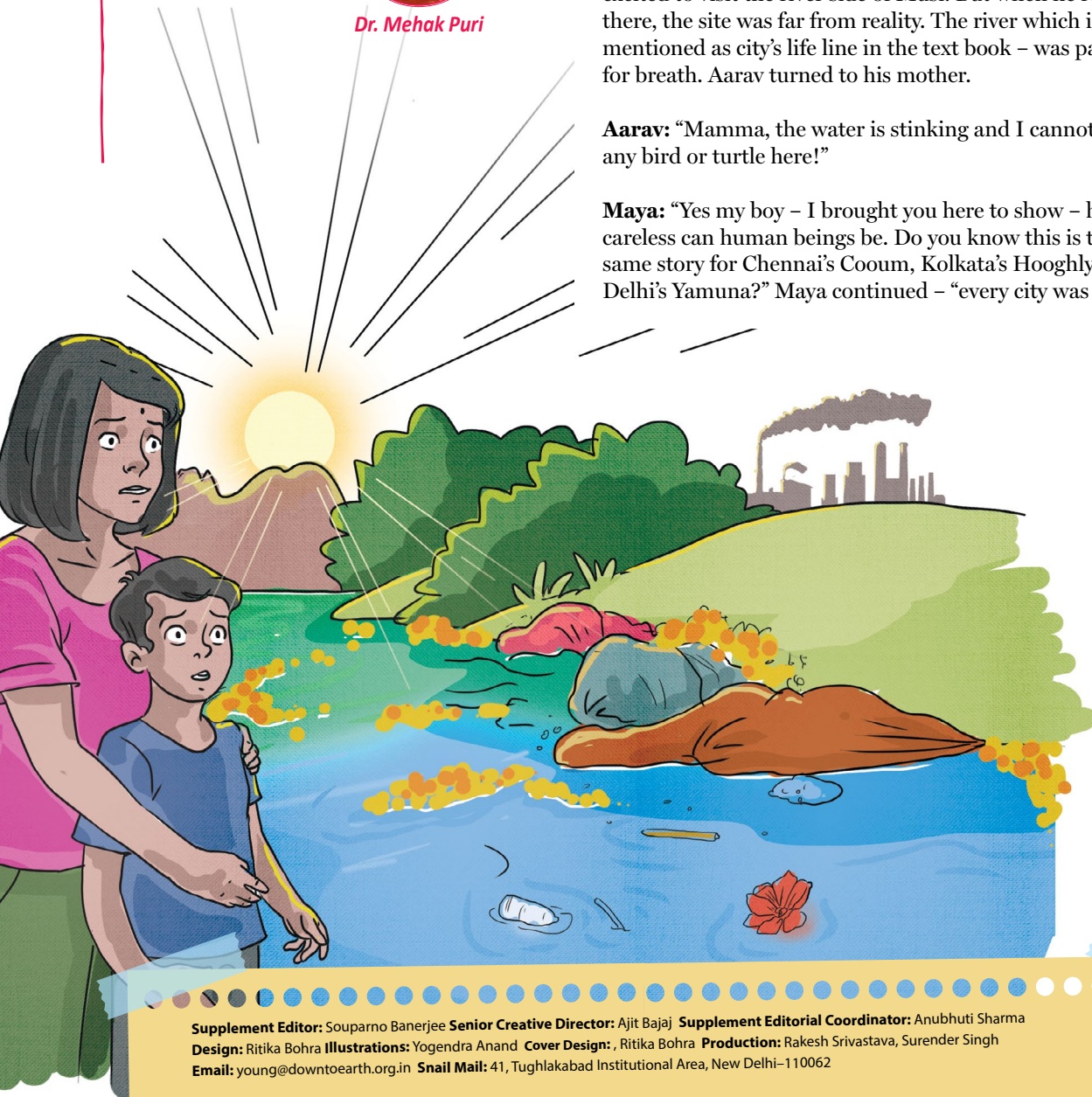


Dr. Mehak Puri

Aarav and his family was visiting the city of Nawabs – Hyderabad during the winter break. Aarav was always attracted towards waterbodies, the greeneries around them and lovely birds which flock around waterbodies during winters. Once he arrived in Hyderabad – Aarav was excited to visit the river side of Musi. But when he reached there, the site was far from reality. The river which is mentioned as city's life line in the text book – was panting for breath. Aarav turned to his mother.

Aarav: "Mamma, the water is stinking and I cannot spot any bird or turtle here!"

Maya: "Yes my boy – I brought you here to show – how careless can human beings be. Do you know this is the same story for Chennai's Cooum, Kolkata's Hooghly and Delhi's Yamuna?" Maya continued – "every city was once



named after its waterbody. Civilization grew along big rivers. Do you know we have special festivals around rivers?"

Aarav thought for a moment. "Like during Chhath Puja, when we offer prayers to the Sun near rivers?"

Maya nodded. "Exactly! From the Ganga to the Yamuna, and all the way to Nile, rivers have always been considered sacred. In mythology, rivers are considered as Gods who brought life. That's why during festivals, we pray and thank them for their water, which sustains us."

Maya: "But you can see how people are throwing plastics, flowers, food into the rivers. The pharmaceutical industries around Musi also release harmful chemicals into it. Do you know Musi receives 2,000 million litres of sewage every day which is almost equal to 250 water days for Delhi?"

Aarav: "Is this the reason we do not see any bird, fish, or turtle inside this river?"

Maya: "Yes. During Ganesh Chaturthi and Durga Puja, idols of Plaster of Paris (POP) are immersed in different rivers and waterbodies. POP idols can contain toxic chemicals, heavy metals, and poisonous oil paints. These can pollute water bodies and harm aquatic life".

Aarav: "How do we save these rivers, Mamma? They need our help."

Maya: "Yes, we all need to work together. Do you know most of our cities get water from surface-based sources, like springs, lakes, and rivers? Surface water even helps in recharging our groundwater

Primary water quality for open bathing

Faecal Coliform (Desirable 500 MPN/100 ml): Indicates low sewage contamination

pH 6.5 to 8.5: Protects skin and delicate organs (eyes, nose, ears) during outdoor bathing

Dissolved Oxygen (Minimum 5 mg/l): Ensures reasonable freedom from oxygen-consuming organic pollution (animal/human waste, industrial pollution, pesticides)

Biological Oxygen Demand (Less than 3 mg/l): Ensures reasonable freedom from oxygen-demanding pollutants and prevents production of obnoxious gases

Source: Notification issued by the Ministry of Environment, Forest and Climate Change, Government of India (2000)

sources. It is our duty to keep them clean. Hundreds of people bathe in these rivers every day and there are special occasions when millions come together and take a holy dip. So, the rivers need to be clean enough so that people do not fall ill after taking the dip."

Aarav: "How do you know that a certain river is safe to take an open bath?"

Maya: "The [Central Pollution Control Board](#) of Government of India has come up with some standards so that the citizens know which river is safe for bathing and which is not. The Board comes up with regular

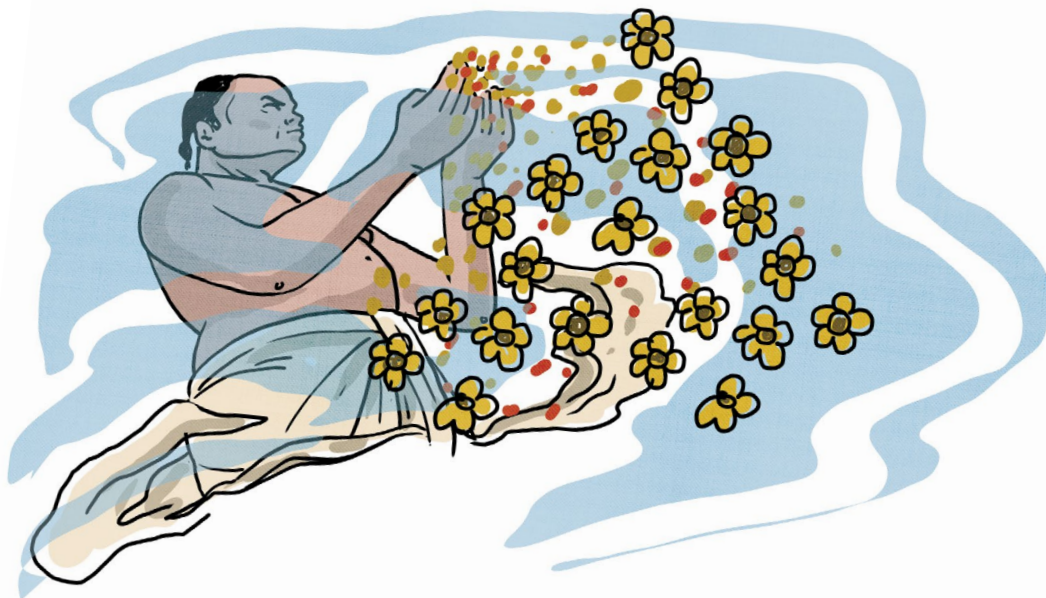
reports on their portal. Or you may get the reports from the [State Pollution Control Board's website](#)."

Aarav: "So, can I search the river near me on the portal of Pollution Control Boards to know whether the river is safe for bathing or not?"

Maya: "Yes, of course. The report will tell you whether the water is acidic, contains any biodegradable plant, or animal waste in the water. If the water is acidic – it may affect your skin, eyes, ears, or any exposed part of your body. The human faeces if dumped into the river may get into your guts and cause intestinal problems."

Maya: "Do you know a big festival is happening in this January-February – where millions have gathered in Prayagraj in Uttar Pradesh to take a holy dip? This is Maha Kumbh Mela – a 45 days event – that started on January 13th and is closing on the February 26th."

"The event is happening after 144 years. Pilgrims include ascetics, saints, sadhus, sadhvis, kalpvasis from Himalayas and different parts of India. They all take bath (snan) at the Triveni Sangam, the confluence of three rivers: Ganga, Yamuna, and the mythological Saraswati river. During the Kumbh Mela, a number of ceremonies take place: the traditional procession of Akharas called 'Peshwai' on elephant backs, horses and chariots, the shining swords and rituals of Naga Sadhus during 'Shahi Snaan', and many other cultural activities. The 'Shahi Snaan' starts with the Paush Purnima and ends with Mahashivratri (Final Snaan). During such holy dip occasions,



almost 6.5 million people assemble at Prayagraj.”

“We also have Kumbh every twelve years and Ardh Kumbh between two Kumbhs. Kumbh is rooted in ancient Hindu mythology and our Rigveda, one of the oldest sacred texts of Hinduism. It speaks of a divine event called the Sagar Manthan or churning of the cosmic ocean, which is considered the genesis of the Kumbh. Pilgrims believe that they can cleanse themselves of sins, break the cycle of rebirth, and achieve spiritual liberation after such holy dips. Kumbh mela happens in Prayagraj, Hardwar, Nashik, and Ujjain. And this time it is “Maha Kumbh” at Prayagraj and is much special. Hence, the scale is huge!”

Aarav: Asked out of concern, “Is it safe for pilgrims?”

Maya: Looking at the curiosity of little Aarav, she beamed and replied, “Yes. Our government is taking steps to keep the River Ganga clean. The drains that end up in the Ganga are directed to the sewage treatment plant (where all dirty water goes for treatment). Toilets are built ecologically safe. A dedicated team called as “Ganga Praharis”

are formed who ensure the cleanliness of rivers and ghats while conserving aquatic life, in collaboration with the Wildlife Institute. They also do round-the-clock cleanliness drives and use nets to remove waste from rivers and ghats. Further, they urge devotees to maintain cleanliness by refraining from throwing waste and garlands into rivers.”

Aarav: Thinking deeply, he asked, “If we can clean up during the Kumbh, why can we not clean it otherwise?”

Maya: “Of course, we can, Aarav. Rivers have a self-cleaning capacity but it only gets polluted when we add pollutants (chemicals that spoil the river’s water quality) more than the water can take. The initiatives like in Maha Kumbh help us learn that right implementation, planning and good will of all, can help us achieve the goal of healthy river.”

Aarav: “Mom, can you share with me some useful tips that I can tell everyone on how to celebrate festivals and still keep the rivers clean?”

Maya: Her face lit up.

“Absolutely! Here are a few steps:

Eco-Friendly Idols: Use idols made from clay or natural materials instead of plaster and synthetic paint.

Community Immersions: Set up artificial water tanks for immersing idols instead of using rivers.

Proper Waste Disposal: Collect and compost organic waste like flowers, food, etc. instead of throwing them into rivers.

Awareness Campaigns: Teach people why it is important to keep rivers clean.

International Efforts: In countries, like Thailand, people celebrate Loy Krathong by floating small, biodegradable baskets on water. It’s a good example for us.”

Aarav nodded. “We should follow these ideas too!”

Maya: She added, “You know, this isn’t just an Indian issue. The Amazon in South America, the Mississippi in the USA,

Nizamuddin Baoli

Ramkund Stepwell

Santhebennur Pushkarini Stepwell

and the Yangtze in China also face pollution from human activities. In Brazil, people celebrate Lemanjá Day by offering flowers to the sea. Some communities are now encouraging biodegradable offerings to protect the water.”

Aarav was thoughtful and pledged to keep rivers clean and share the tips with his friends.

Maya hugged him. “That’s the spirit! If we all work together, our rivers can stay beautiful and healthy for generations.”

Temple Tanks & Water Structures: Culture & Festivities Across India

Tamil Nadu: Theppa Thirunal and Madha Kulam

Theppa Thirunal is a festival whose locus is centred around the tank, on which the processional deity is taken out in a float. The festival involves ceremonial boat rides on rivers, lakes, or temple tanks and holds deep cultural, spiritual, and ecological significance.

Lady’s Tank or Madha Kulam, part of the 16th century Velankanni Church and the Shahul Hamid Dargah tank at Nagore are not just reservoirs of water but also hold profound religious, cultural, and environmental significance, particularly in relation to rivers and water conservation. Their

roles are deeply interlinked with the spiritual and ecological fabric of the region.

Delhi: Nizamuddin Baoli

The 14th-century Nizamuddin Baoli in Delhi is a remarkable example of India’s traditional water management systems and holds unique secular, cultural, and ecological significance. Its connection with natural underground springs and its historical association with rivers underscore its importance as a symbol of sustainable water practices and communal harmony.

(Photo caption above: Hazrat Nizamuddin Baoli, a deep stepwell built in AD 1321-22 at the shrine of Hazrat Nizamuddin Auliya, New Delhi.)

Gujarat: Kunds

Surya Kund at Modhera, built during the Solanki dynasty, is one of the most spectacular examples. Temples to the sun typically have a tank reflecting the Sun because it is believed that the Sun God emerged from its cosmic waters. One of the most ornate stepped tanks, Surya Kund was used to store clean water and devotees would stop there for ceremonial ablutions before proceeding to worship.

(Photo caption left: Famous Ramkund Stepwell at the Sun Temple in Modhera, Gujarat.)

Karnataka: Pushkarnis

The sacred and historic city of Hampi, built by the Vijayanagara kings in the 15th century, is renowned for its architectural brilliance, including structures designed for ritual bathing and cleansing, deeply intertwined with the Tungabhadra River. These water structures, including stepped tanks, sacred baths, and canals hold immense spiritual, cultural, and ecological significance related to the river.

(Photo caption above: Santhebennur Pushkarini Stepwell, Davangere, Karnataka, India – Built in the 16th century by Hanumantappa Nayaka, a local Palegar.)

Punjab: Sarovars

The sarovar (lake) at the Golden Temple in Amritsar, constructed in the 16th century, is not just a sacred water body but also a profound symbol of spirituality, inclusivity, and ecological harmony. Its association with rivers and its cultural importance transcend religious boundaries, making it a vital element of the region’s spiritual and environmental heritage.

The author is a Senior Research Associate, Water Programme, Centre for Science and Environment, New Delhi

Green Schools

Recipes from the Roots

How Local Ingredients and Sustainable Recipes can Nurture Health, Heritage, and the Planet



Kimi Roy



Tushita Rawat

In today's fast-paced world, food habits are increasingly shaped by mass-produced ingredients and ready-to-eat items. Quick snacks often mean packaged foods or fast food like burgers, overshadowing traditional homemade snacks. As lifestyles evolve, people lean towards mass-produced food, moving away from regional, home-cooked meals. However, each region boasts unique local ingredients and traditional recipes with greater nutritional value and environmental benefits. Embracing these foods is essential in a climate-risked world.

The Green Schools Programme hosted a webinar for teachers, principals, and food enthusiasts to explore traditional recipes made from local ingredients. The session emphasized how such culinary practices, tied to local history and sustainability, can reduce environmental strain. As part of this initiative, the [Sustainable Recipe Contest](#) encouraged participants to share traditional recipes that honour locally-grown ingredients. These winning recipes included Bombax Ceiba bud pickle, Gandha prasaruni pattta roll, and Khat malori ka Chilla, showcasing India's diverse, sustainable culinary traditions.

All parts of the Bombax ceiba plant are used in traditional medicines that treat pimples, wounds, diarrhoea, and other diseases. In India, it is majorly found in Andhra Pradesh, Kerala, and Maharashtra.

Ingredients

- Bombax ceiba buds: 250 grams
- Mustard seeds: 2 tablespoons
- Fenugreek seeds: 1 tablespoon
- Turmeric powder: 1 teaspoon
- Red chili powder: 1 teaspoon
- Vinegar: 1 tablespoon
- Mustard or refined oil: 1 cup
- Salt: As per taste

Bombax ceiba bud pickle



Instructions:

1. Rinse tender Bombax Ceiba buds with cold water.
2. Dry roast mustard and fenugreek seeds for 2-3 minutes. Then grind them into a coarse powder.
3. Mix the buds with the dry roasted powder. Add turmeric, red chili powder, and salt to it.
4. In a pan, heat mustard oil. Once it starts to smoke, let it cool slightly.
5. Carefully pour the oil over the spiced buds. For tanginess, add vinegar and combine all the ingredients.
6. Transfer the mixture to a clean, dry glass jar. Seal the jar tightly and allow the pickle to marinate for at least 2-3 days at room temperature. The pickle will then be ready.

This recipe was sent by Durgesh, TGT, The Samarth School, New Delhi.

Gandha Prasaruni leaves are a tropical vine that is native to Asia. In India, they are found in some states such as Bihar, Odisha, Bengal, Assam, and in some parts of the Himalayas. These medicinal leaves aid digestion, and help with arthritis, body aches, and diabetes.

Ingredients

- Gandha Prasaruni leaves: 10 gm
- Maida or gram flour: 1 cup
- Tomato: 1
- Onion: 1
- Cumin: $\frac{1}{2}$ teaspoon
- Turmeric powder: $\frac{1}{4}$ teaspoon
- Refined oil: 1 teaspoon
- Water: $\frac{1}{2}$ cup
- Green chilies: 1-2
- Salt: As per taste

Gandha Prasaruni patta rolls



Instructions:

1. Chop the leaves, onion, tomato, and green chilies.
2. Mix them with maida/gram flour, water, turmeric, cumin, and salt to form a batter. Let it rest for 10 minutes.
3. Heat oil in a pan and spread a thin layer of batter.
4. Cover and cook for 3 minutes, then flip and roll it.
5. Cook for another 3 minutes and serve it hot with chutney or sauce.

This recipe was sent by Padmaja Pati, Headmaster, B.N. Nodal High School, Sarasara, Boudh District, Odisha.

Khat malori is a perennial herb that grows in the western Himalayas. The leaves contain oxalic acid so they should not be eaten in large quantities as they can reduce the body's ability to absorb minerals. Fresh or dried leaves are used to stop bleeding. As a diuretic and laxative the leaves have a cooling property and thus it is used in the treatment of fevers and scurvy.

(Diuretics help reduce fluid and salt build up in the body and laxatives help relieve constipation.)

Ingredients

- Khat malori leaves: $\frac{1}{2}$ kg fresh
- Gram or black gram flour: 500 gm
- Coriander leaves: 1 cup
- Onions: 2-3
- Green chilies: 1-2
- Turmeric powder: $\frac{1}{2}$ teaspoon
- Carom seeds: 1 teaspoon
- Refined oil: 1 tablespoon

Khat malori ka chilla



Salt: As per taste

Instructions

1. Chop the Khat malori leaves, onion, and green chilies into small pieces.
2. Make a gram flour batter and add the chopped vegetables and all the spices and coriander leaves to it.
3. Heat oil in a pan and evenly spread the batter on it.
4. Cover the pan with a lid and cook both sides of the chilla for 6 to 7 minutes each.
5. Cook the other side for 6 to 7 minutes by covering the pan and serve it hot.

This recipe was sent by Tarsem Kumari, TGT, Government High School, Anji, Solan District, Himachal Pradesh.

The authors: Kimi Roy was a Sub-Editor from Dec'24 to Jan'25 and Tushita Rawat is Programme Manager in the Environment Education Unit of Centre for Science and Environment, New Delhi.

**PREVENT
AMR**



Scary Plotter

AND
THE
DISORDER
OF THE ANTIBIOTIX

PRESENTED BY: SUPER BUGWARTS SCHOOL OF REALITY AND MUGGLES
IN LEAD ROLE: GRAM-POSITIVE AND GRAM-NEGATIVE MULTI-DRUG RESISTANT BACTERIA
IN SUPPORTING ROLE: HOMO SAPIENS SAPIENS (MODERN HUMANS)

Scary Plotter, better known as AMR (antimicrobial resistance), is at it again. Watch it lay waste to the world of the Antibiotix. Making our friendly neighbourhood medicines impotent and useless, through its demons of Overuse and Misuse

JOIN OUR FIGHT AGAINST AMR

For details, visit: www.cseindia.org/page/antimicrobial-resttance-programme